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Short Communication

Serological Survey of *Neospora caninum* and *Toxoplasma gondii* Co-Infection in Rodents in Northwestern Iran

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Abstract

Background: Our knowledge of the epidemiology of rodents' parasitic agents in Iran is scarce, although some of these pathogens play an important role in human and veterinary medicine, such as *Toxoplasma gondii* and *Neospora caninum*. The purpose of this study was to determine the seroprevalence of *Toxoplasma gondii* and *Neospora caninum* in rodents of northwestern Iran between Mar and Dec 2015.

Methods: Overall, 157 serum samples from rodents (101 *Meriones persicus*, 41 *Mus musculus*, and 15 *Cricetulus migratorius*) were assayed by the indirect fluorescence antibody test (IFAT) for antibodies to *T. gondii* and *N. caninum*.

Results: We found a prevalence of 20.38% (32/157) for *N. caninum,* 35% (55/157) for *T. gondii*. Co-presence of antibodies to *N. caninum* and *T. gondii* was found in 10 (6.36%) rodents. A significant association was found between the rodents species and seropositivity to *N. caninum* ($P<0.05$) but there was no association with rodents species for *T. gondii*. The overall prevalence of the aforementioned parasites was higher in male versus female rodents.

Conclusion: The high seroprevalence of toxoplasmosis and neosporosis in rodents in the study area has implications for translocation of these infections across wider geographical regions since these rodents are mostly preyed on by cats or dogs; hence, which can transfer the parasite to other hosts.